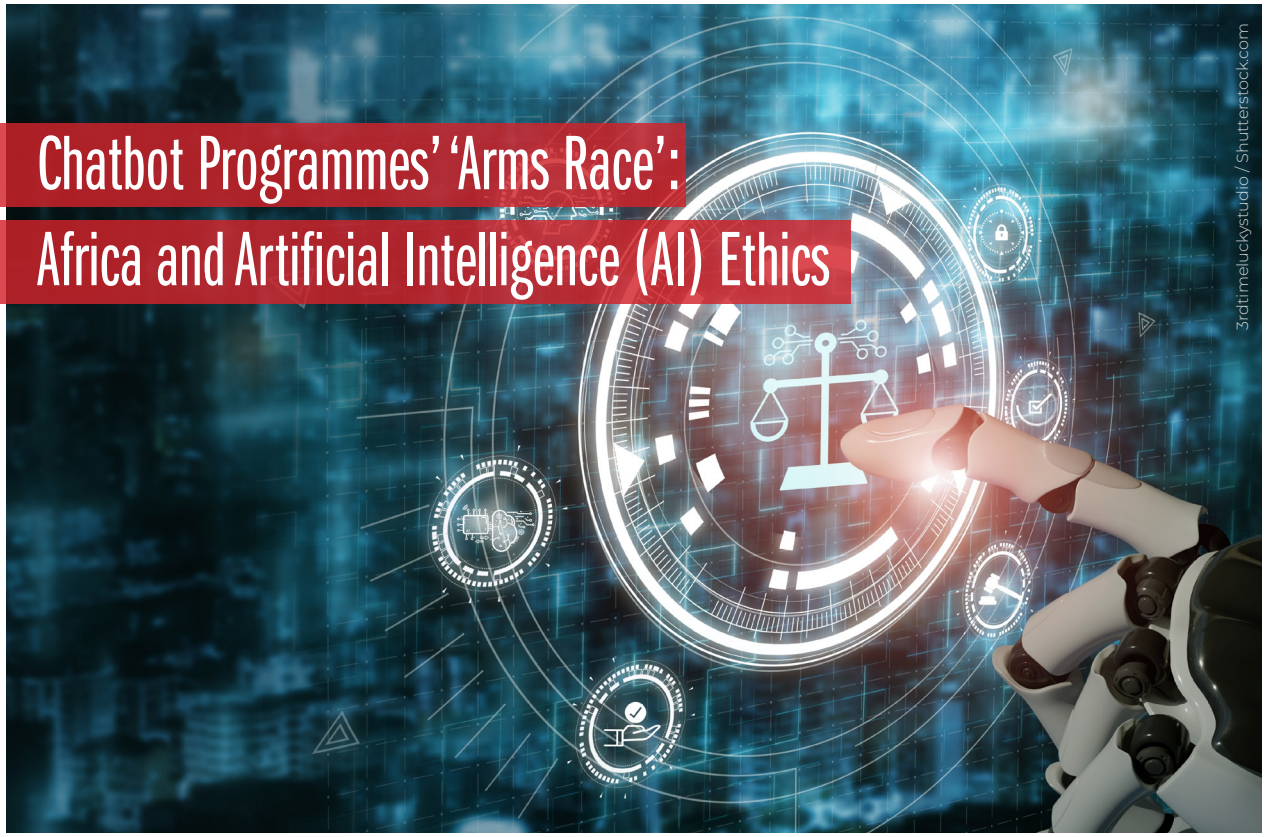

Chatbot Programmes' 'Arms Race': Africa and Artificial Intelligence (AI) Ethics

By Tapiwa Chagonda

Abstract

This paper argues that the AI revolution which is currently unfolding and being fuelled by the significant strides in Generative AI-powered technologies, calls for an urgent response by the African continent, to ensure that possible harms associated with this cutting-edge technology are mitigated. The 'arms race' to create chatbots that can rival Open AI's ChatGPT-4.0 technology by big technology companies such as Google and Meta, is not only hastening the pace of the AI revolution but is also bringing to the fore the double-edged nature of this technology. The benefits of AI generative technologies such as chatbots in fields such as the academy; health; agriculture; music and art, have been touted in recent times, but the ethical concerns around issues of bias; possible proliferation of misinformation from algorithms that are trained on datasets that are not fully representative of the global South's realities, especially Africa; breaches in privacy issues and threats of job losses, still linger. The fact that in March 2023, an Elon Musk-led petition to have a six-month moratorium on AI chatbot innovations began circulating raises serious ethical concerns around the AI revolution, which makes it critical for a continent such as Africa, which has largely been a consumer of these technologies and not an innovator, to urgently draft measures that can protect it. The paper contends that even though Africa is not homogenous in nature, it needs to come up with an AI ethics-driven framework that protects the majority of its population which is mired in poverty and likely to be on the receiving end of any cons associated with AI technologies. This framework should be largely anchored in the African philosophy of Ubuntu, but also pragmatic enough to include positive facets of global-North philosophical strands such as deontology, which largely places currency on ethical principles and rules above the outcomes they produce. Organisations such as the African Union (AU) and the United Nations Education Scientific

and Cultural Organisation (UNESCO) can play a critical role in coming up with an AI framework that is binding to member states. This will help protect vulnerable and marginalised groups on the continent from some of the negative effects of AI innovations.

Introduction

The Fourth Industrial Revolution (4IR) and its array of technologies such as artificial intelligence (AI), robotics, machine learning, cloud computing, 3D & 4D Printing, quantum computing, Internet of things (IoT) and other highly advanced technologies, has ushered in a brave and fascinating new era which is full of possibilities but also fraught with challenges. Huge strides are being witnessed in AI, especially, which are being felt in many spheres of life and shaping many sectors' operations. This explosion of AI technologies, which mostly have their origins from the global North, has led a number of scholars to interrogate the efficacy of some of these AI programmes within contexts such as Africa, which appear to be mostly consuming these technologies that are designed from Western perspectives and driven by values from the same. Scholars such as Birhane (2020) and Kwet (2019) have even gone further to define the technological relationship between the global North and Africa within the context of 4IR, as the algorithmic colonisation of the latter, due to the proliferation of huge and powerful technological firms that are occupying the digital infrastructure and ecosystem of the African continent. Such a scenario around most of these big technological firms' technologies that are largely driven by AI raises ethical questions around what Zuboff (2019) terms surveillance capitalism, which is linked to issues of privacy and data protection, bias and fairness when it comes to accessing and consuming the benefits of these advanced technologies within the African context. The fierce and fast-paced AI competition among the big technological firms such as Google, Microsoft, Meta and Apple is intensifying, especially in light of Open AI's Chatbot GPT strides that are promising to revolutionise many sectors that range from art, music and the academy. The intriguing advancements that come with these Chatbot AI strides are also exponentially increasing the ethical risks around issues of privacy, management of big

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data, potential job losses in the future and possible proliferation of fakeness. In the wake of what Swisher (2023) terms the 'arms race' of Chatbot AI and its attendant ethical questions, among the powerful technological corporations, where does this leave the continent of Africa?

The above question is critical and the importance of interrogating Africa's role in this AI revolution cannot be over-emphasised. Artificial Intelligence (AI) which has been described and defined by leading scholars in that field such as Marwala (2019: 56) as technology that makes machines 'intelligent' and as "a model created to solve a specific problem or provide a particular service", by Gates (2023: 1), co-founder of Microsoft, has exploded in recent times and its influence has been brought to the fore by advancements in machine learning, deep learning, and natural language processing, which has, in turn, led to the development of intelligent systems such as ChatGPT-4.0.

The interrogation of AI and ethics is particularly important in the context of Africa at this juncture, when the AI revolution's pace appears

to be hastening as a consequence of Open AI's ChatGPT-4.0 powers, which appear to have sparked an AI chatbot 'arms race' among the world's top technological firms. Chatbots, which are generative artificial intelligence algorithms are envisaged to make a huge impact in many facets of our lives, including work, education, health, art and music through their role of responding to prompts on tasks they might be asked to perform. In a bid to not get left behind in the AI revolution, which is unfolding, other big technological firms such as Google, Meta and Baidu, have also launched their own rival chatbots such as Gemini, Blenderbot and Ernie, respectively (BBC 2023). These strides in AI technologies such as the emergence of sophisticated chatbots are crucial from the African continent's perspective, as the continent is increasingly adopting AI technologies to solve problems in areas such as healthcare, agriculture, and education (Gwagwa et al 2022). However, the use of AI in these contexts raises a number of ethical concerns that must be addressed. For example, AI systems may perpetuate biases and discrimination if they are not designed and trained in an ethical manner (Crawford & Joler 2019). This is especially problematic in Africa, where historical and structural inequalities are already pervasive.

Moreover, the introduction of chatbots in Africa raises additional ethical concerns around AI. Chatbots can be used to provide support and information to users, but they can also be used to collect and analyse personal data, potentially infringing on users' privacy (Mittelstadt et al. 2016). Additionally, the use of chatbots may lead to job losses and a reduction in human interaction, which could have negative social and economic impacts (Brynjolfsson and Mitchell 2017).

To address these ethical concerns, it is important to ensure that AI systems are developed and used in an ethical manner. This can be done by promoting transparency, accountability, and participation in the development and deployment of AI systems (Taddeo and Floridi 2018). Additionally, efforts must be made to ensure that AI systems are designed to be inclusive and unbiased, and that they are used to promote social justice and human rights (Jobin et al. 2019). Ultimately, the ethical use of AI will be critical in ensuring that the benefits of these technologies are realized while minimizing their potential risks and harms in Africa and beyond.

AI Ethics and its Origins

The notion of AI ethics first came to the fore in the academy in the 1970s, with the publication of Joseph Weizenbaum's seminal text, *Computer Power and Human Reason: From Judgment to Calculation* (1976). Weizenbaum was among the first scholars to raise ethical concerns regarding the development of AI systems, arguing that the use of computers to make decisions about human lives was inherently problematic. Since then, numerous scholars and practitioners have contributed to the development of AI ethics as a field of study, including philosophers, computer scientists, lawyers, and social scientists.

> "The lack of ethical guidelines and regulations around the development and deployment of AI systems can lead to public mistrust and skepticism around their benefits *(Jobin et al. 2019).*"

AI ethics is a critical branch of ethics for a number of reasons. First, as AI technologies become increasingly ubiquitous, they have the potential to significantly impact society, both positively and negatively (Bostrom and Yudkowsky 2014). For example, AI systems may perpetuate existing biases and inequalities, or they may be used to infringe on individual rights and freedoms. AI ethics is, therefore, critical in ensuring that the development and use of these technologies are guided by moral principles that promote social justice and human well-being. Second, AI ethics is critical in promoting public trust and confidence in AI technologies. The lack of ethical guidelines

and regulations around the development and deployment of AI systems can lead to public mistrust and skepticism around their benefits (Jobin et al. 2019). Ethical considerations must, therefore, be integrated into the development of AI systems to ensure that they are transparent, accountable, and trustworthy. Within the African context, the discourse around AI ethics has been gaining a lot of traction, with organisations such as the African Union (AU), United Nations Educational, Scientific and Cultural Organisation (UNESCO) and the World Economic Forum (WEF) leading these initiatives (Birhane 2020; Gwagwa et al. 2022), however, the continent still does not have a coherent ethics-driven framework or approach towards AI and its associated technologies.

Utility of AI Ethics in the Development and use of AI Technologies

Ethics is important in the development and use of AI technologies for several reasons. Firstly, AI technologies have the potential to impact various aspects of society, including employment, healthcare, and education, among others. Therefore, ethical considerations are necessary to ensure that their development and use align with societal values and do not lead to unintended consequences. Floridi and Sanders (2004), argue that ethical considerations are essential in the development and use of AI technologies to ensure that they promote human welfare and do not cause harm. They argue that this requires taking into account the potential risks and benefits of AI technologies, as well as the ethical implications of their use.

Secondly, Bostrom (2014), notes that ethical considerations are particularly important in the development of super intelligent AI, which could have significant impacts on society. ChatGPT-4 is a good example of such technology which has aroused both excitement and alarm around its capabilities. Bostrom (2014) further argues that ethical considerations are necessary to ensure that super intelligent AI does not pose an existential risk to humanity. This argument appears to be a crucial driving motive behind the call to put in place a six-month 'ceasefire' around the design of cutting-edge AI innovations.

Thirdly, Wallach and Allen (2010) state that ethical considerations are necessary to ensure that AI technologies are developed and used in a way that aligns with societal values, rather than just individual or corporate interests. This is easier said than done and this is where contexts such as Africa will always find themselves in a quandary as they interface with AI technologies that have their origins from the global North. Ensuring that societal values are at the core of AI technologies that are consumed by marginalised groups and that this trumps corporate interests, and the profit-motive is one formidable challenge which an AI ethics framework for Africa should grapple with. This task requires considering the potential impacts of AI technologies on various stakeholders, including marginalized communities and future generations.

> "This paper argues that the consequentialist approach should not be at the core of determining an African response to AI innovations because one of its major shortcomings in AI ethics is that it can be difficult to predict the consequences of AI systems."

Ubuntu versus the Consequentialist and Deontological Approaches to AI Ethics

In framing Africa's response to AI innovations, this paper argues that it is important to be guided by some ethical approach. The major approaches to ethics centre around consequentialism and deontology, which have their origins from the global North. However, scholars such as Gwagwa et al. (2022) and Mhlambi (2020), caution against being guided by Western ethical approaches when it comes to Africa's response to AI technologies and rather, advocate for the adoption of the *Ubuntu* approach, in Africa's interaction with

AI. What are the arguments of the Western and African approaches to ethics and what are their implications in the adoption of AI technologies?

The consequentialist approach to AI ethics prioritises the outcomes or consequences of AI systems above all else. In this approach, the ethicality of a decision or action is determined by the net positive or negative impact it has on society or individuals. One example of this approach in the African context is the use of AI in healthcare. AI systems can help doctors diagnose diseases more quickly and accurately, improving patient outcomes and saving lives. However, there are concerns about the potential for AI to exacerbate existing inequalities in healthcare access and outcomes. This paper argues that the consequentialist approach should not be at the core of determining an African response to AI innovations because one of its major shortcomings in AI ethics is that it can be difficult to predict the consequences of AI systems. This makes it hard to determine whether an action will have positive or negative consequences in the long term. In addition, the consequentialist approach has the potential for unintended consequences. This means that even if an action is intended to have positive consequences, it may have unintended negative consequences. This is one of the challenges of emerging AI technologies, thus, their adoption should not be premised upon consequentialist reasoning.

The deontological approach, on the other hand, prioritises ethical principles and rules above the outcomes they produce. In this approach, AI systems must adhere to ethical principles such as respect for individual autonomy, beneficence, non-maleficence, and justice. This approach appears to have been influential in informing the European Commission High-Level Expert Group on Artificial Intelligence (2019) and AI guidelines by Jobin et al. (2019) that are mostly in use in the global North.

Finally, Ubuntu, which loosely means that, 'a person is a person through other persons', (Mbiti 1970) makes for an ideal approach to frame Africa's response to AI because of its emphasis on the values of community, interdependence, and empathy (Metz 2011). Such an approach would recognise that AI systems exist within a broader social and cultural context, and that ethical considerations must be grounded in the values and experiences of the communities they serve. Given the importance of the collective within the African context, this approach, coupled together with deontology's progressive principles of beneficence, non-maleficence and justice, would create a robust framework that would endeavour to include a lot of marginalised groups within the African context who might be excluded or suffer from some of AI's harms based on their gender, race, class or geographical location fault lines. Thus, pragmatism of combining the Ubuntu approach and positive elements of some of the West's guiding AI principles might work in Africa's interests, as the continent grapples with a response to AI innovations. The next section underscores the value of such a guiding framework in a context such as Africa.

Importance of AI Ethics in the African Context

There are several ethical challenges associated with adopting Western-developed Artificial Intelligence (AI) technologies in the African context and some of these include:

1. **Bias and Discrimination**: AI algorithms can perpetuate biases and discriminatory practices, especially if they are trained on data that is not representative or inclusive of diverse populations. This is one of ChatGTP's challenges, as it is not fully trained on data that speaks to the realities of the African context, as characterised by some of the inaccurate responses it gives to questions related to this context. This could lead to the widening marginalization of certain groups, reinforcing existing inequalities, especially in highly unequal societies such as South Africa.
2. **Cultural Aptness**: AI technologies that are developed in Western contexts may not be culturally appropriate for African communities. For example, facial recognition technology may not work as well on dark-skinned individuals, which could lead to false identifications and mistrust (Kwet 2019).
3. **Privacy and Data Protection**: AI technologies often rely on large amounts of data to function, which raises issues of privacy and data protection. In Africa, where data protection laws may be weaker or non-existent, there is a risk that personal data could be misused or exploited. Italy's brief ban of ChatGPT in 2023 brought to the fore this challenge.

"The lack of trust in institutions, including government and technology companies, can result in skepticism and mistrust of AI technologies *(Jobin et al. 2019).*"

4. **Job Displacement**: As AI technologies become more advanced, they may replace human workers in certain industries, leading to job losses and economic insecurity. This could have a disproportionate impact on vulnerable populations in Africa that rely on informal or low-skilled work.
5. **Ownership and Control**: AI technologies are often developed and owned by large multinational corporations, which can raise questions about who has control over the technology and its applications. In the African context, this could lead to a loss of sovereignty and control over important decision-making processes (Birhane 2020; Kwet 2019).

The above AI ethical concerns are just a few examples of the ethical challenges associated with the adoption of Western-developed AI technologies in the African context. It is important for stakeholders to address these challenges in a thoughtful and collaborative manner to ensure that AI technologies are developed and used in ways that are ethical, inclusive, and beneficial for all on the African continent.

Influence of Cultural, Social, and Economic Factors in Shaping Africa's AI Ethical Response

Cultural, social, and economic factors play an important role in shaping ethical considerations around AI development and use in Africa. In this section, I will discuss how these factors can influence the ethical considerations surrounding AI in the African context.

Cultural factors can have a significant impact on the ethical considerations around AI development and use in Africa. For example, in some African cultures, traditional beliefs and practices may be prioritized over technological advancement (Gwagwa et al., 2020). This can affect the uptake and acceptance of AI technologies and may raise ethical concerns around issues such as privacy, data ownership, and consent. Additionally, cultural norms around power and authority may influence the way in which AI systems are designed and deployed. For example, AI systems that are designed to replace human decision-making may be viewed as threatening to traditional hierarchies and power structures.

Social factors such as trust, transparency, and accountability can also influence ethical considerations around AI development and use in Africa. The lack of trust in institutions, including government and technology companies, can result in skepticism and mistrust of AI technologies (Jobin et al. 2019). This lack of trust can be compounded by the opacity and complexity of AI systems, making it difficult for individuals to understand and hold accountable those responsible for their design and deployment. Additionally, social structures such as gender and socio-economic status can also affect the ethical implications of AI technologies. For example, AI systems that perpetuate existing biases may have a disproportionate impact on marginalised communities, such as women and low-income groups (Gwagwa et al. 2020).

Finally, economic factors can also shape ethical considerations around AI development and use in Africa. The digital divide, which refers to the gap between those who have access to digital technologies and those who do not, can create ethical concerns around the equitable distribution of benefits and harms associated with AI technologies (Gwagwa et al. 2020). Additionally, the economic interests of technology companies and governments may conflict with the ethical principles of transparency and accountability. For example, in some African countries, AI technologies may be developed and deployed without adequate public consultation or oversight, in order to serve the economic interests of governments or corporations (Gates 2023).

The Role of International Organisations in Promoting AI Ethics in Africa

International organisations such as the United Nations (UN), the African Union (AU), and the World Economic Forum (WEF) have been playing a crucial role in promoting AI ethics in Africa, however, more still needs to be done to ensure a coherent response to AI by the continent. The UN, AU and the WEF have developed various initiatives and frameworks aimed at addressing ethical concerns arising from the use of AI technologies in Africa. The UN, for instance, has established the High-Level Panel on Digital Cooperation, which seeks to promote cooperation among different stakeholders on issues related to AI ethics (United Nations 2021). The AU, on the other hand, has developed the Digital Transformation Strategy for Africa, which aims at promoting AI and other digital technologies while ensuring that they adhere to ethical principles (African Union 2020). The WEF has also been involved in promoting AI ethics in Africa through its Centre for the Fourth Industrial Revolution in South Africa, which seeks to promote best practices in the use of AI and other emerging technologies (World Economic Forum 2021).

The above initiatives and frameworks provide important guidelines for the development and implementation of AI technologies in Africa, ensuring that they are used in a way that is sustainable, transparent, and fair to all stakeholders. They also promote the establishment of clear regulatory frameworks that guide the use of AI and other emerging technologies, ensuring that they are not misused or abused. How effective have been these organisations in making sure that Africa responds in lockstep to AI innovations, given that their policies and advice on how to approach AI innovations is not binding?

In terms of UNESCO, the organisation has been making efforts to address ethical considerations around AI in Africa. For example, it organised the "AI Ethics and Africa" workshop in 2019 to promote discussions on ethical considerations and how AI can be used to achieve the Sustainable Development Goals in Africa. However, it remains to be seen how effective these efforts will be in the long run, as UNESCO's resources and reach are limited.

The African Union has also made some strides in addressing ethical considerations around AI. In 2019, they adopted the "AI for Africa" strategy, which aims to promote the development and use of AI in Africa while ensuring that it is used in a responsible and ethical manner. However, again, it remains to be seen how effective this strategy will be, as many African countries face challenges such as inadequate infrastructure and lack of skilled personnel to effectively implement and regulate AI technologies.

Lastly, the World Economic Forum (WEF) has also been working on ethical considerations around AI in Africa. In 2019, they launched the "Responsible AI for Social Empowerment" initiative, which aims to promote the development and use of AI in Africa in a responsible and ethical way. However, like the other organisations, the effectiveness of this initiative remains to be seen.

While UNESCO, the African Union, and the World Economic Forum have all made strides to address ethical considerations around AI in Africa, it's too early to tell how effective these efforts will be in the long run. Many challenges still need to be addressed, such as infrastructure and skilled personnel, to ensure that AI is used in a responsible and ethical way in Africa, in addition to making some of the frameworks around AI innovations, binding to African countries that are members of the AU and the UN.

Potential Future Directions for international Organisations to romote AI ethics in Africa

One potential direction for international organisations to promote AI ethics in Africa is through capacity building and education initiatives. This could involve providing training and resources to stakeholders, including government officials, industry leaders, and civil society organisations, to help them understand the ethical implications of AI technologies and develop strategies for addressing these implications. By promoting AI ethics education and capacity building initiatives, international organisations can help to build a culture of ethical awareness and responsibility around AI technologies in Africa. In institutions of higher learning, teaching of AI Ethics should be introduced to all students, regardless of disciplinary background. The teaching of AI ethics, which should

be introduced from the undergraduate level, will expose our future generation of policymakers, technological designers, business and political leaders of the need to approach our interaction with AI technologies in general from an ethical and human-centred perspective.

A further potential direction for international organisations to promote AI ethics in Africa is through the development of ethical guidelines and frameworks. It is important that organisations such as the AU and UNESCO make these binding to African member states, given the number of potential dangers which AI innovations can cause in the African context. These guidelines and frameworks could be developed in collaboration with stakeholders in Africa, including some of the marginalised groups and could provide guidance on best practices for the ethical development and use of AI technologies in the region. For example, the Institute for Electrical and Electronic Engineering (IEEE) Global Initiative on Ethics of Autonomous and Intelligent Systems has developed a set of ethical guidelines for the development of AI technologies, which could be adapted and contextualised for use in Africa. By developing ethical guidelines and frameworks that are specific to the African context, international organisations can help to ensure that AI technologies are developed and used in a way that promotes social justice and human well-being in the region.

A third potential direction for international organisations to promote AI ethics in Africa is through the establishment of ethical review boards and oversight mechanisms. If these are to be introduced in all member states of the AU and UNESCO and made binding, that would be a step in the right direction in ensuring that AI innovations are interrogated and reviewed before just being opened up to the public. These mechanisms could be responsible for reviewing AI projects and technologies for ethical implications and ensuring that they comply with ethical guidelines and frameworks. For example, the European Union has established an Ethics Advisory Group to provide independent advice on the ethical implications of AI technologies (European Commission, n.d.). By establishing similar oversight mechanisms in Africa, international organisations can help to ensure that AI technologies are developed and used in a way that is consistent with ethical principles and values.

> “In 2019, the World Economic Forum (WEF) launched the “Responsible AI for Social Empowerment” initiative, which aims to promote the development and use of AI in Africa in a responsible and ethical way.”

Conclusion

The world is on tenterhooks and at a crossroads, given the immense advancements that have occurred in recent times in the field of AI and no wonder Bill Gates terms these technological developments, a revolution unfolding right before us. The challenge is around the opportunities and ethical dilemmas which Generative AI technologies are posing for a continent such as Africa, whose context is replete with poverty, inequality and non-existent binding ethical frameworks on how to respond to AI technologies. Given the fast-paced nature of the AI revolution, urgent attention towards developing an AI ethics framework that is binding is required to safeguard the continent from some of the harmful effects of AI technologies. With the active cooperation of African states, bodies such as the AU and UNESCO should lead the charge in drafting a binding AI ethical framework which can serve the interests of vulnerable and marginalised groups on the African continent, thus, forestalling possible harms associated with AI technologies.

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